other departmental tracking in order to identify the baseline of expenses. Next, where the costs associated with the requirements documentation and the requirements development were not part of the dollars that were tracked, they are added. Then, although dollars that were expended by contractors do not require benefits or loadings, employee-related expenditures need to have benefits and loadings for Social Security, payroll taxes, and medical benefits, among other things added to the base line.

These calculations yield, as an interim step, the development expense, representing the total incurred amount. However, as in any life cycle of software, there are various stages of software costs, and the predominant stage, according to the industry, is mostly in the maintenance phase of the software. Once software is implemented, there is ongoing upkeep to recognize new functionality, improve functionality, recognize new hardware that is to be supported, and recognize requirements that come out of industry fora or industry collaborative sessions. All of these items require changes to the system to make sure it meets the requirements of the user community.

At this point of the study, recognizing that with the tracking mechanisms in place there is not a separate identification of activities that are considered maintenance, we estimate a portion of the tracked costs that should be attributed to software maintenance and subtract these expenses from the tracked costs to calculate the software development and software maintenance costs separately.

Finally, the Access to OSS development expenses have applied to them the revenue loadings and expense projections to bring all of the dollars to a single time point in the future. This identifies the final development expenses to be recovered, which is then amortized over an expected recovery period. At that point, a regional demand forecast is applied in order to come up with the unit cost per UNE loop, re-sold line or UNE platform.

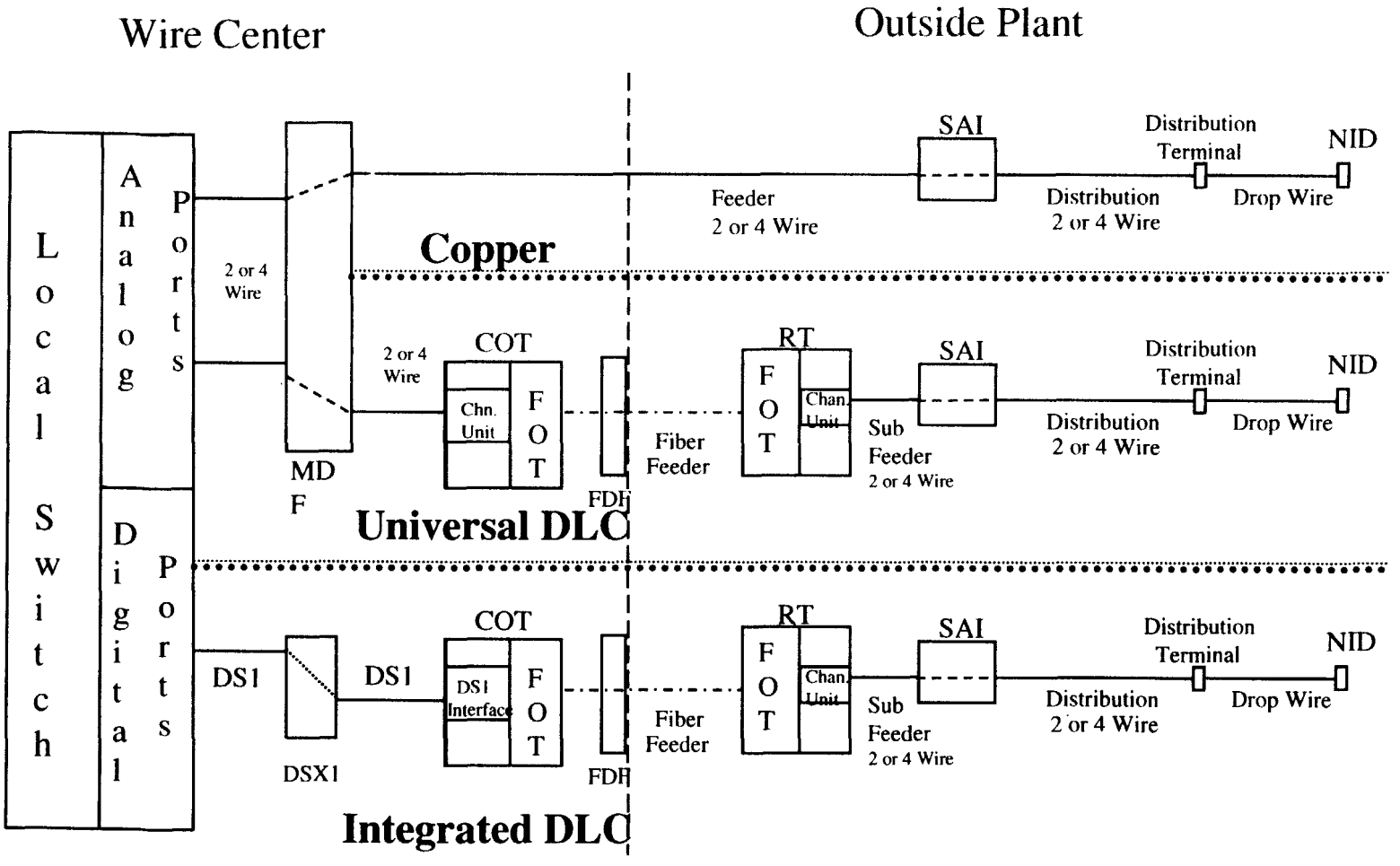
With respect to the ongoing costs, there are two components that are considered: software maintenance costs and investment-related costs associated with the computer hardware. The Access to OSS development expense serves as the starting point for estimating the ongoing maintenance expense. To the development dollar amount, the study applies a maintenance factor to identify the annual ongoing costs associated with software maintenance. Next, annual cost factors are applied to the computer investments for mid-range equipment, as well as the main frame equipment (MIPS and GIGS). However, since a network factor explicitly for general-purpose computer on a regional basis is not developed, a digital switch network factor is used as a surrogate based upon the jurisdictions where the equipment can be actually housed.

As to the cost of money, the depreciation and the federal and state income taxes, all of the jurisdictions within the region, have the same values for computers, except for the state income tax. The state income tax is developed on a weighted average basis across all of the jurisdictions.

Finally, all of these investment-related costs are added to the annual ongoing expenses that are associated with the maintenance to get the total recurring annual ongoing costs associated with the Access to OSS UNE. The common overhead and revenue loadings are applied and this total is divided by the demand forecasts to yield an appropriate unit cost.

C

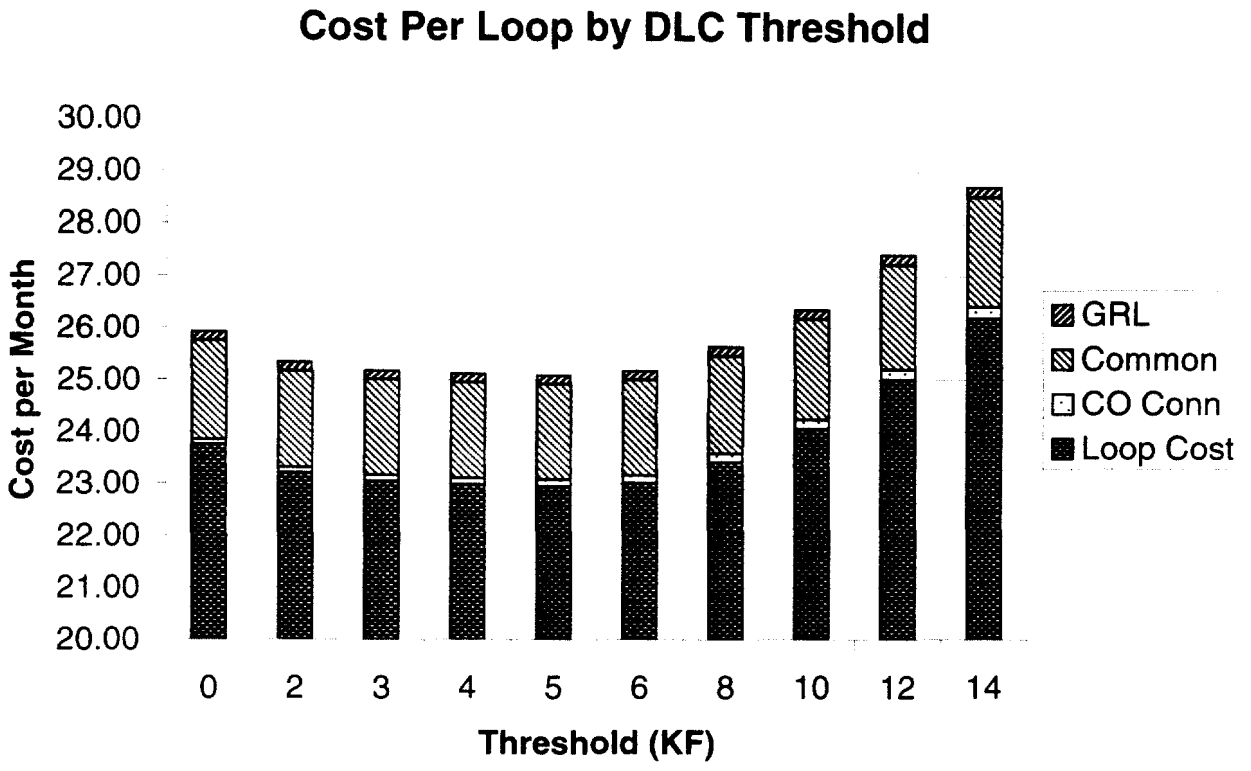
Loop Architecture Alternatives



Abbreviations:
FOT = fiber optic terminal FDF = fiber distribution frame DSX1 = digital cross-connect box

D

LCAM Copper-Fiber Breakpoint Calculations



ACF values:
Common Overhead = 0.0798
Gross Revenue = 0.00675

STUDY_ID	DENSITY_CELL_ID	THRESHOLD	COST_TOT	COST_CO_TOT	T_COMM	T_GRL	TOTAL COST PER LOOP
706	STATE	0	23.76	0.09	1.90	0.17	25.93
689	STATE	2	23.20	0.11	1.86	0.17	25.34
709	STATE	3	23.05	0.12	1.85	0.17	25.18
607	STATE	4	22.98	0.12	1.84	0.17	25.12
676	STATE	5	22.95	0.13	1.84	0.17	25.09
679	STATE	6	23.01	0.14	1.85	0.17	25.17
692	STATE	8	23.42	0.16	1.88	0.17	25.64
695	STATE	10	24.05	0.18	1.93	0.18	26.35
698	STATE	12	25.01	0.20	2.01	0.18	27.41
684	STATE	14	26.19	0.22	2.11	0.19	28.71

Legend
STUDY_ID = unique identifier assigned to study
DENSITY_CELL_ID = geographic scope of study
THRESHOLD = length of breakpoint assumed for study
COST_TOT = total calculated loop cost
COST_CO_TOT = total calculated COT cost
T_COMM = common overhead costs
T_GRL = gross revenue loadings

E

Non-Recurring Charge Confidence Interval Attachment

UNE Number	UNE Name	NRC Normal	95% CI Precision Level	NRC Expedited	95% CI Precision Level
1	Two Wire New Initial	$182.83	2.9%	$252.94	2.9%
2	Two Wire New Additional	$63.52	4.9%	$89.86	4.9%
3	Two Wire HotCut Initial	$264.64	3.1%	$370.57	3.1%
4	Two Wire HotCut Additional	$115.64	5.6%	$164.88	5.6%
5	IDLC to Copper HotCut Initial	$280.43	3.8%	$393.31	3.9%
6	IDLC to Copper HotCut Additional	$117.97	7.5%	$167.93	7.6%
7	Four Wire New Initial	$220.17	3.7%	$305.95	3.7%
8	Four Wire New Additional	$109.56	6.3%	$155.20	6.2%
9	Four Wire HotCut Initial	$284.42	3.0%	$398.12	3.1%
10	Four Wire HotCut Additional	$148.08	5.4%	$210.38	5.3%
11	ADSL/HDSL Loop New Initial	$184.29	3.4%	$254.97	3.5%
12	ADSL/HDSL Loop New Additional	$65.91	7.9%	$93.30	7.8%
13	(Reserve)	$0.00	N/A	$0.00	N/A
14	(Reserve)	$0.00	N/A	$0.00	N/A
15	(Reserve)	$0.00	N/A	$0.00	N/A
16	(Reserve)	$0.00	N/A	$0.00	N/A
17	Line Port New Initial	$75.08	3.1%	$100.90	3.3%
18	Line Port New Additional	$21.32	12.0%	$30.30	12.0%
19	Line Port HotCut Initial	$165.92	3.4%	$231.18	3.5%
20	Line Port HotCut Additional	$80.07	6.0%	$114.29	6.0%
21	End Office Trunk Port Initial	$530.62	4.9%	$769.76	4.9%
22	End Office Trunk Port Additional	$246.63	10.7%	$357.71	10.7%
23	Tandem Trunk Port Initial	$456.07	5.2%	$659.49	5.2%
24	Tandem Trunk Port Additional	$223.18	11.8%	$321.71	11.9%
25	TOPS Trunk Port Initial	$554.10	9.0%	$804.12	9.1%
26	TOPS Trunk Port Additonal	$222.94	11.8%	$321.38	11.8%
27	(Reserve)	$0.00	N/A	$0.00	N/A
28	Features - with Subsequent Service Order	$18.45	N/A	$23.00	N/A
29	IDLC / TR008 Port	$428.58	5.6%	$613.10	5.7%
30	Switched DS1 Port Initial	$428.22	5.6%	$612.59	5.7%
31	Switched DS1 Port Additional	$269.28	9.8%	$388.18	9.9%
32	SMDI Port	$1,041.61	58.7%	$1,504.04	59.2%
33	NID - Travel	$80.40	4.2%	$108.07	4.3%
34	(Reserve)	$0.00	N/A	$0.00	N/A
35	(Reserve)	$0.00	N/A	$0.00	N/A
36	Two Wire Analog-Digital UNE-P New Initial (see Note 3)	$155.18	3.4%	$217.23	3.4%
37	Two Wire Analog-Digital UNE-P New Additional (see Note 3)	$59.29	5.5%	$83.98	5.5%
38	Two Wire Analog-Digital Conversion UNE-P Initial	$119.00	3.8%	$166.10	3.8%
39	Two Wire Analog-Digital Conversion UNE-P Add'l	$38.95	5.9%	$55.26	5.8%
40	IOF Voice Grade	$233.32	3.2%	$314.87	3.4%
41	IOF DS-1	$243.41	5.2%	$329.64	5.6%
42	IOF DS-3	$287.45	4.9%	$392.47	5.1%
43	IOF DDS	$234.04	3.2%	$315.88	3.4%
44	IOF Optical (Optical 3, 12 and 48)	$289.31	6.1%	$395.09	6.4%
45	(Reserve)	$0.00	N/A	$0.00	N/A
46	(Reserve)	$0.00	N/A	$0.00	N/A
47	Entrance Facilities DS-1 Channel Termination	$374.45	4.0%	$514.75	4.2%
48	Entrance Facilities DS-3 Channel Termination	$418.64	3.9%	$577.79	4.0%
49	(Reserve)	$0.00	N/A	$0.00	N/A
50	(Reserve)	$0.00	N/A	$0.00	N/A
51	(Reserve)	$0.00	N/A	$0.00	N/A
52	(Reserve)	$0.00	N/A	$0.00	N/A
53	Signaling Transfer Point (STP) Port Termination	$703.40	7.6%	$1,022.16	7.7%
54	AIN Service Creation	$709.51	N/A	$957.42	N/A
55	Query Back	$15.12	N/A	$18.85	N/A
56	Manual Surcharge - Loop	$14.67	N/A	$18.28	N/A
57	Manual Surcharge - Digital	$15.18	N/A	$18.92	N/A
58	Manual Surcharge - Special	$37.45	N/A	$46.68	N/A
59	Manual Surcharge - Platform	$11.05	N/A	$13.77	N/A
60	Manual Surcharge - Line Sharing	$7.29	N/A	$9.08	N/A
61	(Reserve)	$0.00	N/A	$0.00	N/A
62	Misdirect In	$43.18	7.6%	$61.76	7.7%
63	Misdirect Out	$112.07	8.0%	$159.18	7.8%
64	TC Not Ready	$70.61	19.4%	$100.41	19.0%
65	Manual Loop Qualification	$114.52	6.1%	$160.63	6.2%
66	Engineering Query	$139.42	7.7%	$195.30	7.7%
67	Engineering Work Order	$640.47	12.2%	$892.08	12.3%

Non-Recurring Charge Confidence Interval Attachment

UNE Number	UNE Name	NRC Normal	95% CI Precision Level	NRC Expedited	95% CI Precision Level
68	Aerial Bridged Tap Removal - One Occurrence	$188.71	6.3%	$266.89	5.9%
69	Aerial Bridged Tap Removal - Multiple Occurrence	$450.90	4.1%	$639.80	3.9%
70	Aerial Load Coil Removal - 21K Ft	$561.33	6.3%	$797.22	5.9%
71	Aerial Load Coil Removal - 27K Ft	$743.72	5.5%	$1,056.75	5.1%
72	Underground Bridged Tap Removal - One Occurrence	$485.12	3.9%	$694.57	3.8%
73	Underground Bridged Tap Removal - Multiple Occurrence	$1,191.94	2.5%	$1,709.01	2.5%
74	Underground Load Coil Removal - 21K Ft	$1,472.75	3.9%	$2,112.26	3.8%
75	Underground Load Coil Removal - 27K Ft	$1,958.94	3.4%	$2,810.14	3.3%
75A	Bridged Tap Removal - One Occurrence (see Note 4)	$243.37	4.2%	$345.75	4.0%
75B	Bridged Tap Removal - Multiple Occurrence (see Note 4)	$587.55	2.8%	$836.96	2.6%
75C	Load Coil Removal - 21K Ft (see Note 4)	$1,017.95	3.3%	$1,456.06	3.2%
75D	Load Coil Removal - 27K Ft (see Note 4)	$1,352.54	2.9%	$1,935.20	2.8%
76	Cooperative Testing	$30.78	7.7%	$43.52	7.6%
77	(Reserve)	$0.00	N/A	$0.00	N/A
78	Line Port Traffic Study - Setup	$23.52	N/A	$34.87	N/A
79	Line Port Traffic Study - Per Week	$10.17	N/A	$15.08	N/A
80	CSS Two Wire New Initial	$223.55	4.4%	$310.56	4.4%
81	CSS Two Wire New Additional	$111.42	7.2%	$157.62	7.1%
82	CSS Four Wire New Initial	$248.08	7.6%	$345.33	7.7%
83	CSS Four Wire New Additional	$137.47	13.3%	$194.58	13.2%
84	IDLC Two Wire New Initial	$151.35	5.4%	$208.92	5.7%
85	IDLC Two Wire New Additional	$47.26	15.1%	$67.24	15.7%
86	(Reserve)	$0.00	N/A	$0.00	N/A
87	(Reserve)	$0.00	N/A	$0.00	N/A
88	Distribution Subloop Two Wire New Initial	$156.38	3.0%	$215.81	3.0%
89	Distribution Subloop Two Wire New Additional	$52.29	4.9%	$74.14	4.8%
90	Distribution Subloop Two Wire LoopThrough Initial	$225.45	3.3%	$314.96	3.4%
91	Distribution Subloop Two Wire LoopThrough Additional	$97.04	5.9%	$138.22	5.9%
92	Distribution Subloop Four Wire New Initial	$190.98	3.7%	$264.91	3.7%
93	Distribution Subloop Four Wire New Additional	$95.69	6.2%	$135.71	6.1%
94	Distribution Subloop Four Wire LoopThrough Initial	$254.00	3.0%	$355.35	3.0%
95	Distribution Subloop Four Wire LoopThrough Additional	$136.55	4.6%	$194.18	4.5%
96	Field Inst Time & Material Increment, 1st Half Hr.	$47.80	5.5%	$67.52	5.4%
97	Field Inst Time & Material Increment, Addl Qtr. Hr.	$8.63	N/A	$12.19	N/A
98	SS7: Rehome D-Link	$249.87	N/A	$368.24	N/A
99	SS7: A-Link to D-Link Conversion	$187.41	N/A	$276.18	N/A
100	SS7: Change in Hub Providers	$124.94	N/A	$184.12	N/A
101	STP A-Link Translations for Basic Setup	$75.65	N/A	$111.48	N/A
102	STP A-Link Translations for ISUP and TCAP	$62.08	N/A	$91.49	N/A
103	STP A-Link Translations for DB Queries, CLASS & CNAM	$67.84	N/A	$99.97	N/A
104	STP A-Link Translations for CLEC-to-CLEC Access	$62.08	N/A	$91.49	N/A
105	STP D-Link Translations for Basic Setup	$46.59	N/A	$68.66	N/A
106	STP D-Link Translations for ISUP and TCAP	$46.59	N/A	$68.66	N/A
107	STP D-Link Translations for DB Queries, CLASS & CNAM	$54.40	N/A	$80.17	N/A
108	STP D-Link Translations for CLEC-to-CLEC Access	$42.75	N/A	$63.00	N/A
109	Subsequent Connections to Same Verizon STP Pair	$62.47	N/A	$92.06	N/A
110	NPA-NXX Input to STP Table (CLASS Features Only)	$31.23	N/A	$46.03	N/A
111	End Office Translations (CLASS Features Only)	$10.62	N/A	$15.65	N/A
[illegible]	SS7 Testing Setup for MTP: Levels 2&3	$499.75	N/A	$668.09	N/A
113	SS7 Testing Setup for ISUP	$499.75	N/A	$668.09	N/A
114	SS7 Testing Setup for DB Queries, CLASS and CNAM	$62.47	N/A	$83.51	N/A
115	SS7 Certification Testing for MTP: Levels 2&3	$978.46	N/A	$1,304.61	N/A
116	SS7 Certification Testing for ISUP	$1,467.69	N/A	$1,956.92	N/A
117	SS7 Certification Testing for 800 DB Queries	$122.31	N/A	$163.08	N/A
118	SS7 Certification Testing for LIDB, CLASS and CNAM	$61.15	N/A	$81.54	N/A
119	Line and Station Transfer	$158.32	8.1%	$221.21	8.1%
120	Dark Fiber - IOF	$435.13	6.8%	$601.56	7.1%
121	Dark Fiber - Loop	$738.91	38.3%	$1,023.86	38.8%
122	Dark Fiber - Records Review	$146.36	21.4%	$217.07	20.5%
123	Line Sharing Initial (see Note 5)	$202.71	2.8%	$280.88	2.8%
124	Line Sharing Additional (see Note 5)	$83.39	4.6%	$117.79	4.5%
125	(Reserve)	$0.00	N/A	$0.00	N/A
126	LIDB - Point Codes Establishment	$132.50	N/A	$196.94	N/A
127	LIDB - Data Storage	$4,208.42	N/A	$5,681.37	N/A
128	ISDN-PRI Port Initial	$562.85	17.8%	$808.88	18.1%
129	ISDN-PRI Port Additional	$403.92	25.0%	$584.47	25.1%
130	DID Trunk Port Initial	$1,385.46	41.3%	$2,020.77	41.2%
131	DID Trunk Port Additional	$1,147.55	49.8%	$1,675.19	49.8%

*This calculation combines survey data with data from a time and motion study and assumes that the sampling variance in the time and motion study is zero.
N/A Indicates that NERA could not evaluate the 95% CI precision level.